



May 12, 2004

Mr. Ray Williamson
Arizona Corporation Commission
1300 W. Washington
Phoenix, AZ 85007

Re: Environmental Portfolio Standard (EPS), R14-2-1618

Dear Mr. Williamson:

As requested, So Cool Energy, Inc. (So Cool) is submitting a request for a modification to the EPS in writing in hopes that you will include it in your recommendations to the Commission.

Introduction

When the EPS was enacted, the intent of the Commission was to displace fossil fuel electric generation with clean, renewable generation to benefit the environment, obviate health risks, increase energy reliability, and decrease price volatility. At the same time, the Commission wished to assist the development of a solar industry in the State of Arizona due to the fact that solar is Arizona's predominant renewable resource. In order to do so, the Commission created a solar set-aside to assist solar technologies, which have historically have been more expensive than other renewable technologies.

To achieve these ends, the language in the rule includes the following relevant provisions (all references herein are to R14-2-1618.):

The EPS requires electric utilities to produce a certain amount of electricity from "solar resources and environmentally-friendly renewable electricity technologies. Section A. "Solar resources include photovoltaic resources and solar thermal resources that generate electricity." Section A. "In 2004, through 2012, the portfolio makeup shall be at least 60 percent solar electric with no more than 40 percent solar hot or other environmentally-friendly renewable electricity technologies." Section B.3.

With this letter, we are requesting that solar air conditioning (or solar HVAC) be included as a solar resource and be included in the 'set-aside.' Without such a clarification, solar air conditioning cannot compete for EPS funding and will not be developed in Arizona in the near future.



Discussion

Currently, solar air conditioning is not counted as a solar resource because it is not very clearly specified in the words "photovoltaic resources and solar thermal resources that generate electricity." Given the fact that during the time period in which this rule was enacted, the solar electric industry was typically perceived as photovoltaic (PV) or concentrating solar. The Commission probably believed, therefore, that the wording it chose would encompass all solar technologies that produce or displace electricity. This is not the case, however.

Solar air conditioning is, in many ways, technically similar to solar electric generation technologies, such as concentrating solar systems. Solar air conditioning technologies could, in most instances, generate electricity to create air conditioning; however, this would not be efficient. Therefore, solar air conditioning systems produce energy to directly power a certain type of air conditionings called chillers. Solar air conditioning, although not actually 'generating' electricity, performs the same function as solar electric generation, it displaces electricity. To exclude solar air conditioning, or indeed any solar resource that displaces electricity, from the solar set-aside seems counterproductive to accomplishing the goals of the Commission. Furthermore, other States that are now becoming aware of this type of technology are including solar resources that displace electricity as solar resources. This is the case in Nevada for example.

Not only does it make sense to include solar air conditioning as a solar resource, to do so will offer many benefits to the State of Arizona. Examining utility load profiles, it is clear that air conditioning constitutes the lion's share of electric demand in the warmer months. To displace a portion of the air conditioning demand with a solar resource has exactly the same, and arguably greater, benefits as generating electricity with solar. Other advantages of solar air conditioning include the following: 1) It is distributed, 2) It addresses a somewhat different market segment than other solar technologies; i.e., large commercial buildings, 3) It has built-in energy storage so that it can provide energy both before and after daylight hours, and 4) In So Cool's case, it can already be provided below the 11 cent premium identified by the Commission's Cost Evaluation Working Group. This solar application can further assist Arizona in meeting its solar goals.

Even though our technology is cost-effective, it is not yet positioned to compete with traditional energy or with relatively inexpensive renewable resources such as wind. As a newcomer to the marketplace, solar air conditioning technologies generally need a boost to move them forward. In order to receive this assistance, it is critical that solar air conditioning be counted as a solar resource.



To our knowledge, there are a few solar air conditioning demonstration projects in the U.S., two in California and one in Texas and many more in the rest of the world. However, there are now also a number of solar air conditioning projects that are in the process of being developed in the U.S. and in Arizona, where at least three or four different companies are now active. According to as least on utility, if EPS *solar* funding is not available to this technology, such projects are still too expensive to compete with non-solar resources and will therefore receive no EPS funding. Thus, unless this clarification is made, it is questionable that the projects under development will be able to move forward and clear that few new projects will be initiated in Arizona in the near term.

In addition to the above reasons, So Cool wishes to note that it established its offices in Phoenix with the intent to build its first U.S. manufacturing facility in Arizona. Without the change requested, this probably will not come to pass.

Conclusion

To include solar air conditioning in the solar set-aside is clearly consistent with the intent of the EPS. In addition, it would be of great benefit to the State to allow solar air conditioning technologies to develop here. Such a change would also assist the State in meeting its EPS goals.

Thank you for your time and attention in reviewing this request. Please contact me if you have any questions.

Very truly yours,

A handwritten signature in black ink, appearing to read "Lori A. Glover", written in a cursive style.

Lori A. Glover
President